

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

MICHAEL RIVLIN,

Plaintiff,

v.

ZIMMER BIOMET, et al.,

Defendants.

CIVIL ACTION

NO. 19-1497-KSM

MEMORANDUM

MARSTON, J.

July 23, 2021

Plaintiff Michael Rivlin brings negligence claims against Defendants Zimmer Biomet Holdings, Inc.¹ and Biomet Leasing, Inc. for injuries that he sustained while flying from Philadelphia International Airport to Zimmer’s headquarters in Warsaw, Indiana. To support his claims, Rivlin intends to use the expert testimony of former commercial pilot Marc Fruchter as evidence that the pilots on the flight to Warsaw breached the relevant standard of care when they failed to warn the passengers about potential turbulence and did not keep the seatbelt sign illuminated for the duration of the flight. Defendants have moved to strike Fruchter’s expert opinion under the standard outlined in *Daubert v. Merrell Dow Pharmaceuticals, Inc.* For the reasons discussed below, their motion is granted in part and denied in part.

I. Factual Background

Rivlin is a board certified, orthopedic surgeon at the Rothman Institute in Philadelphia. (Doc. No. 29-8 at 10:19–11:4.) On January 21, 2017, he flew with four residents and fellows

¹ Zimmer Biomet Holdings, Inc. asserts that it has been incorrectly identified in the complaint as “Zimmer Biomet.” (Doc. No. 27-2 at p. 1.)

under his charge to attend an elbow instrumentation training program at Zimmer’s headquarters in Indiana. (*Id.* at 32:25–35:25.) Biomet Leasing owned the plane, and Zimmer employed the flight crew, Pilot in Command Barry Lintz² and First Officer Josh McClintic.³

As the pilot in command, Lintz was responsible for flight planning, while McClintic, as first officer, was charged with pre- and post-flight operations. (Doc. No. 29-5 at 5:22–6:2.) To prepare for the January 21 flight, Lintz reviewed the weather for the flight path the night before, looking at weather charts, reports, and alerts. (Doc. No. 29-4 at 7:2–8:10.) In addition, the morning of the flight, Lintz reviewed a standard weather briefing from FltPlan.com. (*Id.* at 7:2–20.) Because these weather briefings are central to the motion before the Court, we begin with a brief overview of aviation weather services in the United States, before discussing the weather conditions on January 21, 2017.

A. Aviation Weather Services

In the United States, multiple agencies — including the National Oceanic and Atmospheric Administration (“NOAA”), the National Weather Service (“NWS”), the Federal Aviation Administration (“FAA”), the Department of Defense, and various private sector weather service providers — work together to provide comprehensive aviation weather forecasting. (Doc. No. 26-14, Aeronautical Information Manual, at § 7–1–1a.) Under this scheme, the NWS issues aviation advisories, including Airmen’s Meteorological Information (“AIRMET”) and Significant Meteorological Information (“SIGMET”), which warn pilots about

² Lintz began flying as a student pilot in 1965, has flown around 25,300 hours, and has multiple type ratings including Learjet and Citation series airplanes. (Doc. No. 29-4 at 5:15–16, 6:2–6, 40:14–18.) In January 2017, he served as Zimmer’s Director of Aviation Services and was “responsible for all corporate aviation.” (*Id.* at 28:18–23.)

³ McClintic is an ex-airline pilot, who had been with Zimmer for 12 years at the time of the accident. (Doc. No. 29-5 at 9:3–5.) He has 8,380 flight hours, six type ratings (including Citation), and was a flight instructor until 2011. (*Id.* at 9:6–10, 10:5–14.)

potentially hazardous weather across a “widespread” area. (*Id.* §§ 7–1–c.4, 7–1–5a.1; *see also id.* § 7–1–5b (explaining that AIRMETs and SIGMETs are issued for areas “of at least 3,000 square miles at any one time,” but “in actuality only a small portion of this total area [may] be affected” by the potentially hazardous weather phenomena).)

AIRMETs are “advisories of significant weather phenomena.” (*Id.* § 7–1–5f.1.) Each AIRMET is classified as either Sierra (instrument flight rules conditions and/or extensive mountain obscurations), Tango (moderate turbulence⁴), or Zulu (icing and freezing). (*Id.* § 7–1–5f.2.) The NWS issues AIRMETs on a scheduled basis every six hours, and pilots are expected to consider any AIRMET issued pre-flight or while en route. (*Id.* § 7–1–5f.1.)

SIGMETs, by contrast, warn of more significant weather conditions than those included in AIRMETs. They “advise[] of weather that is potentially hazardous to all aircraft,” warning pilots that, among other things, severe or extreme turbulence⁵ or clear air turbulence (“CAT”⁶) is

⁴ The FAA Aeronautical Information Manual describes “moderate” turbulence as turbulence that causes “[c]hanges in altitude and/or attitude . . . but the aircraft remains in positive control at all times.” (Doc. No. 26-14 at Tbl. 7–1–10.) Inside the plane, passengers “feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.” (*Id.*) McClintic similarly described moderate turbulence as “anything that would potentially take an item off of a shelf and move it Like let’s say you had a bowl of cereal sitting on a shelf. If you got into moderate turbulence, I would expect that bowl of cereal to fall off that particular shelf.” (Doc. No. 29-5 at 13:3–11.) And Lintz described moderate turbulence as being “bumpy enough that you are more comfortable with your seatbelt on.” (Doc. No. 29-4 at 22:4–11.)

⁵ The Aeronautical Information Manual describes “severe” turbulence as turbulence that “causes large, abrupt changes in altitude and/or attitude,” and may render the aircraft “momentarily out of control.” (Doc. No. 26-14 Tbl. 7–1–10.) Inside the aircraft, severe turbulence causes passengers to be “forced violently against seat belts or shoulder straps,” tosses unsecured objects about, and makes “[f]ood [s]ervice and walking . . . impossible.” (*Id.*) By contrast, turbulence is labeled “extreme” when the “aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.” (*Id.*)

⁶ Clear air turbulence is high-level turbulence not associated with cumuliform cloudiness, including thunderstorms. (Doc. No. 26-14 at Tbl. 7–1–10.) “The best available information on this phenomenon must come from pilots via the PIREP reporting procedures,” and “[a]ll pilots encountering CAT conditions are urgently requested to report time, location, and intensity . . . of the element to the FAA facility with which they are maintaining radio contact.” (*Id.* § 7–1–24.)

occurring or expected to occur. (*Id.* § 7–1–5c.1.) SIGMETs, unlike AIRMETs, are unscheduled alerts and are only valid for four hours. (*Id.* § 7–1–5c.)

In addition to AIRMETs and SIGMETs, which are issued by the NWS, the FAA air traffic facilities solicit pilot reports about in-flight weather conditions — known as Pilot Weather Reports (“PIREPs”) — when certain conditions, including moderate to severe turbulence and CAT, are reported or forecasted. (*Id.* § 7–1–19a.) If a pilot is unable to make a PIREP to air traffic control by radio, he or she is encouraged to report the in-flight conditions as soon as practicable after landing. (*Id.* § 7–1–19d.)

B. The January 21 Flight

1. Pre-flight

At 3:45 a.m. EST (8:45 a.m. UTC) on January 21, 2017, the NWS issued an AIRMET Tango for an area stretching across the Eastern United States from New Hampshire to Florida and as far west as Ohio. (Doc. No. 29-6, AIRMET Tango.) The AIRMET Tango warned of moderate turbulence between 24,000 and 40,000 feet (*id.*), and it applied to the time (7:30 a.m. EST) and location (Pennsylvania and Ohio) of the January 21 flight. (*Id.* (stating that the update for turbulence was “valid until 211500,” *i.e.*, 10:00 a.m. EST); *see also* Doc. No. 29-4 at 10:19–12:15 (Lintz explaining AIRMET wording).) Lintz testified that it was part of his standard practice to review AIRMETs, like this one, before beginning a flight, in addition to reviewing weather charts, reports, and alerts, along with a standard weather briefing from FltPlan.com. (Doc. No. 29-4 at 7:2–8:10, 12:11–15.)

2. Mid-Flight

When Rivlin and the other passengers boarded Biomet’s Cessna Citation Excel in Philadelphia on the morning of January 21, the weather was clear and sunny. (Doc. No. 29-8 at

39:2.) There were no flight attendants on board, so once the passengers were seated, Lintz and McClintic played a pre-recorded general safety advisory, which among other things, discussed seat belt use:

Welcome Aboard. Federal aviation regulations require that we point out some of the Citation's main safety features. Please refer to the passenger briefing card located in your seat pocket or storage drawer. To fasten your seat belt, push the metal tab into the end of the metal buckle then pull on the belt end to tighten. The belt may be released by pressing the release button on the end of the buckle. A shoulder strap is located on the top of the seat back on the outboard side. Regulations require that this strap is used and that the aisle is clear. . . . For your added comfort and safety, always observe the seat belt-no smoking signs. Thank you for your attention and have a pleasant flight.

(Doc. No. 26-9; *see also* Doc. No. 29-8 at 39:18 (Rivlin testifying that he remembers the advisory telling him that “[i]f the light is on you have to put on the seat belt”).)

In addition to the recorded message, by each seat there was a Passenger Briefing Card with additional safety information:



(Doc. No. 26-10; *see also* Doc. No. 29-4 at 37:3–7.) The card recommends that “seat belts remain fastened during flight” and requires passengers to “fasten seat belt and shoulder harness” for takeoff and landing:



(Doc. No. 26-10 (cropped); *see also* Doc. No. 29-4 at 37:3–7.) Rivlin does not recall whether he looked at the card while on the flight to Warsaw, but he was already familiar with this information from previous flights and knew that his seat belt should remain fastened during the flight when he was not up and moving around the cabin. (Doc. No. 29-8 at 44:15–45:16.)

Although Lintz remembers some light turbulence during takeoff, he, Rivlin, and two of the other passengers agree that the ride was generally “smooth” up until the incident. (*See* Doc. No. 29-4 at 23:20–21, 24: 7–8; Doc. No. 29-8 at 42:13–15, 45:22–23; Doc. No. 26-8 at 37:23–38:4; Doc. No. 26-11 at 26:16–19; Doc. No. 29-10, Email from Barry Lintz to Tony Collins & Chad Phipps (“Other than some light turbulence after departure the ride was smooth.”).) Lintz also testified that although he remembers hearing PIREPs reported on the radio during the flight, they reported turbulence that was “no worse than moderate” and “all at lower altitudes.” (Doc. No. 29-4 at 3–13. *But see* Doc. No. 29-10 (reporting on the day of the event that “[a]t no time was there any mention of moderate or severe turbulence” on the radio leading up to the incident).)

Given the smooth flight and clear conditions, Lintz turned off the seatbelt sign when the plane reached cruising altitude. Rivlin then began lecturing his students on how to properly conduct a hand examination. (Doc. No. 29-8 at 47:20–48:2.) Although he remained seated for most of the lecture, he eventually unbuckled his seatbelt and stood up so that he could walk

among the students, using his own hand as a demonstrative. (*Id.* at 41:23–42:9, 43:2–15, 43:25–44:4, 47:20–48:2.)

As the pilots began their descent to Warsaw — and while Rivlin was still lecturing — the plane suddenly hit severe turbulence at around 36,000 feet. (Doc. No. 29-5 at 15:11–18; *see also* Doc. No. 29-10.) One of the students, Dr. Andrew Miller, described the turbulence as creating a “free fall type of effect” that “came out of nowhere,” and he remembers “two separate . . . bumps — drops.” (Doc. No. 26-8 at 37:2–22; 39:21–40:2.) With each drop, Rivlin — who was still unbuckled — was thrown into the ceiling, hitting his head and shoulder. (Doc. No. 29-8 at 43:16–22, 49:16–50:20, 53:16–19; Doc. No. 26-8 at 40:7–13.)

In the cockpit, Lintz interrupted autopilot and took control, reducing the engine power to idle. (*See* Doc. No. 29-10; *see also* Doc. No. 29-5 at 16:19–17:20, 18:18–20.) Once the wings were level and the plane was under control, Lintz engaged continuous engine ignition and turned on the seatbelt sign. (*See* Doc. No. 29-10; *see also* Doc. No. 29-5 at 16:19–17:20, 18:18–20.) Rivlin returned to his seat and buckled his seatbelt. There was “no inquiry from the pilots,”⁷ but once seated and buckled, Rivlin yelled to them that the passengers were “fine . . . [D]on’t worry about us. Just fly the plane.” (Doc. No. 29-8 at 54:23–55:10, 58:20–25.) They flew the rest of the way to Warsaw without incident. (*Id.* at 55:24–56:3, 60:16–18.)

⁷ Lintz and McClintic testified that after the turbulence, McClintic checked with the passengers to see if anyone had been injured, and everyone reported that they were fine. (Doc. No. 29-4 at 29:14–18; *see also* Doc. No. 29-10; Doc. No. 29-5 at 17:25–18:2, 19:4–18 (“And then, after that, I referenced back to the aft cabin to check on the passengers.”).) Lintz and McClintic also checked on the passengers when they were taxiing in at Warsaw, and the passengers again reported that they were fine, and the two pilots heard laughter in the background. (Doc. No. 29-4 at 29:19–22; Doc. No. 29-5 at 19:24–20:8; Doc. No. 29-10.) It wasn’t until Lintz was in the lobby with the passengers awaiting their return flight to Philadelphia that Rivlin mentioned that he had hit the ceiling and his neck hurt. (Doc. No. 29-4 at 29:22–30:20; *see also* Doc. No. 29-10 (“It took a third conversation with them in the hangar lobby while they were getting ready to go home before they admitted they did fly out of their seats.”).)

3. *Post-Flight*

As Rivlin and the other passengers disembarked in Warsaw, one of the pilots noted that the turbulence “was one of the wors[t] things he has experienced” and asked whether any of the passengers was injured or needed an ambulance. (*Id.* at 59:10–13.) Rivlin responded that it was “nothing that requires going to the hospital now” and that they “just have achiness.” (*Id.* at 59:20–60:1, 63:16–24.) Rivlin also believes he mentioned that he hurt his neck, but declined further treatment. (*Id.* at 63:22–24; *see also* Doc. No. 29-4 at 30:9–20.)

Rivlin and his students went on to Zimmer’s headquarters, but throughout the day, Rivlin “felt like [he] had really bad whiplash.” (Doc. No. 29-8 at 63:7–8.) After the elbow course, Rivlin and the students returned to the Warsaw airport, where they were delayed while the plane was checked for damage. (*Id.* at 63:25–64:22; *see also* Doc. No. 29-4 at 32:10–15 (explaining that the maintenance manual requires that the aircraft be inspected after experiencing severe turbulence).) The flight back to Philadelphia was uneventful, but Rivlin remembers it being “different than . . . the first time,” in that “everything got strapped down, every single bag got latched down.” (Doc. No. 29-8 at 65:6–16.)

After the flight, Lintz emailed his reporting executive, Tony Collins, and Zimmer’s chief legal officer, Chad Phipps, about the turbulence event. (*See* Doc. No. 29-10, Ex. I, Email; *see also* Doc. No. 29-4 at 27:21–28:17.) He explained that the plane encountered “severe turbulence over Ohio during our descent into Warsaw,” but “[n]o one was injured and the aircraft was not damaged” and at “no time were we in danger of losing control of the aircraft.” (Doc. No. 29-10.) In a later email to Collins, Lintz also stated that he “intend[ed] to have the pilots add the example of our occurrence to their verbal briefings to anyone new that rides on our aircraft to drive the point home that their seatbelts need to remain on.” (Doc. No. 29-10 at p. 4.) He also lamented:

Unfortunately[,] you don't always receive reliable information about severe turbulence. When we got on the ground[,] we looked at one of our aviation weather sources and saw there were 22 reported incidents within a 150 mile radius of our flight at the same time but all were reported after we took off and no one said anything on the radio since the reports were on other radio frequencies and not along our flight path.

....

The best policy is to keep your belt on at all times unless using the restroom or accessing the galley and then only do so for a short time. . . . Our group, aviation, will have a follow up discussion at our next safety meeting to consider further ways to strengthen methods to avoid this.

(*Id.*)

Lintz also submitted a Zimmer Biomet Safety Report (Flight Hazard), in which he gave a detailed description of the flight and proposed a "suggested corrective action":

It is worth the effort when checking the weather to check on Jetstream wind tracks to see where they are located in reference to your route of flight. The turbulence charts depict areas of turbulence but not intensity. In our case there were no Pireps on the enroute center frequencies regarding severe turbulence. I have looked at Pireps given on weather briefings with some skepticism since they are usually old information when you actually get airborne however a little more study of ones that are available along with Jetstream location will be something I pay closer attention too [sic].

....

Also we need to emphasize, especially to new passengers, to keep their seatbelts on at all times unless they need to stand up for some reason. When this event takes place and you are not secured it's almost impossible to totally protect yourself. I intend to include a brief reference to this incident in all my future passenger briefings prior to flight as a way to reinforce getting them to keep their seat belts on.

(*See* Doc. No. 29-10.)

In the weeks following the accident, Rivlin continued to have headaches and neck pain, and he ultimately went to the emergency room on February 16, 2017. (Doc. No. 29-8 at 66:13–67:5, 76:3–12; *see also generally id.* at 75–154.)

II. Procedural History

Rivlin filed this action on January 16, 2019 in the Philadelphia Court of Common Pleas, asserting negligence claims against Zimmer and Biomet Leasing. (*See* Doc. No. 1.) Defendants removed the case to this Court. (*Id.*) At the close of fact discovery, Rivlin provided Defendants with the expert report of former commercial pilot Marc A. Fruchter in support of his negligence claims. (*See* Doc. No. 26-16; *see also* Doc. No. 26-17 (Fruchter’s supplemental report).)

In his initial report, Fruchter concludes that given the available AIRMET, PIREPs, and upper wind charts, along with the known prevalence of CAT in the Great Lakes region in the winter months, the pilots should have predicted the likelihood of CAT, the “seat belt sign should have been illuminated for the entirety of this flight, and the passengers should have been advised of the risk of turbulence.” (Doc. No. 26-16 at p. 6, ¶¶ 2–3; *see also id.* at p. 6, ¶¶ 5–7.) Fruchter also opines that McClintic’s pre-flight safety briefing did not comply with Federal Aviation Regulation 91.159. (*Id.* at p. 6, ¶ 4.) And finally, he concludes that when the pilots encountered the severe turbulence, Lintz “did not follow the directions in the Aircraft Flight Manual.” (*Id.* at p. 6, ¶ 8.) Defendants move to strike these opinions, arguing that they are inadmissible under the standard outlined in *Daubert v. Merrell Down Pharmaceuticals, Inc.* (*See* Doc. No. 26-1.) The Court held a *Daubert* hearing on July 14, 2021, at which Fruchter testified.

III. Legal Standard

Federal Rule of Evidence 702 outlines the conditions that must be met for a witness to testify as an expert:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;

- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. This rule requires the trial judge to act as a “gatekeeper,” ensuring that “any and all expert testimony or evidence is not only relevant, but also reliable.” *Pineda v. Ford Motor Co.*, 520 F.3d 237, 243 (3d Cir. 2008) (cleaned up); *see also Sikkelee v. Precision Airmotive Corp.*, No. 4:07-CV-00886, 2021 WL 392101, at *2 (M.D. Pa. Feb. 4, 2021) (“A district court exercises more control over experts than over lay witnesses,” because “expert evidence can be both powerful and quite misleading” given “the difficulty in evaluating it.” (quotation marks omitted)). “*Daubert*’s general holding — setting forth the trial judge’s general ‘gatekeeping’ obligation — applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.” *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 142 (1999).

To be admissible under Rule 702, expert testimony must satisfy “three major requirements: (1) the proffered witness must be an expert, *i.e.*, must be qualified; (2) the expert must testify about matters requiring scientific, technical or specialized knowledge; and (3) the expert’s testimony must assist the trier of fact.” *Pineda*, 520 F.3d at 244. These factors are often referred to as “qualification,” “reliability,” and “fit.” *See Schneider ex rel. Estate of Schneider v. Fried*, 320 F.3d 396, 404 (3d Cir. 2003) (“We have explained that Rule 702 embodies a trilogy of restrictions on expert testimony: qualification, reliability, and fit.”).

“Qualification requires that the witness possess specialized expertise.” *Pineda*, 520 F.3d at 244 (cleaned up). However, the Third Circuit has counseled that “a broad range of knowledge, skills, and training qualify an expert.” *Id.*; *see also Schneider ex rel. Schneider*, 320 F.3d at 404 (same); *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 741 (3d Cir. 1994) (same).

Under the reliability prong, an “expert’s testimony is admissible so long as the process or technique the expert used in forming the opinion is reliable.” *Pineda*, 520 F.3d at 247 (quoting *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 742). In other words, the proffered testimony “must be based on the methods and procedures of science rather than on subjective belief or unsupported speculation” and the “expert must have good grounds for his or her belief.” *Schneider ex rel. Schneider*, 320 F.3d at 404 (cleaned up). Last, the “expert testimony must fit the issues in the case,” meaning the “expert’s testimony must be relevant for the purposes of the case and must assist the trier of fact.” *Id.*; see also *Daubert v. Merrell Down Pharms., Inc.*, 509 U.S. 579, 591 (1993) (“Fit is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.”).

The party proposing the expert witness must show that each prong — qualification, reliability, and fit — is satisfied by a preponderance of proof. *Oddi v. Ford Motor Co.*, 234 F.3d 136, 144 (3d Cir. 2000); see also *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 743 & 744 n.11 (explaining that the proponent must make more than a *prima facie* showing that a technique is reliable); *Ellison v. United States*, 753 F. Supp. 2d 468, 476 (E.D. Pa. 2010) (“The burden is on the proponent of the evidence — here the plaintiff — to establish admissibility by a preponderance of the evidence.”). However, at all times, we must remember that the Rules of Evidence generally “embody a strong preference for admitting any evidence that may assist the trier of fact,” and Rule 702 specifically has a “liberal standard of admissibility.” *United States v. Downing*, 753 F.2d 1224, 1230 (3d Cir. 1985); see also *Oddi*, 234 F.3d at 156 (“The test is not whether the expert might have done a better job.” (cleaned up)).

IV. Discussion

Fruchter’s initial expert report lists nine “findings and conclusions.” (Doc. No. 29-12 at

p. 6.) Defendants take issue with seven of those conclusions, grouping them into three broad categories: (1) the pilots’ alleged failure to anticipate the possibility of CAT; (2) the pilots’ alleged failure to provide the passengers with appropriate pre-flight briefings; and (3) Lintz’s alleged failure to follow the directions in the Airplane Flight Manual during the severe turbulence encounter. (Doc. No. 26-1 at p. 5.) Defendants argue that Fruchter’s opinions are “inadmissible *ipse dixit*,” that they are not based on technical or specialized expert knowledge, and that they contradict the factual record. (*Id.*)

A. Qualifications

As an initial matter, we find Fruchter generally qualified to opine about the standard of care for pilots faced with a situation like that experienced on January 21, 2017. Fruchter has worked in the aviation industry for over 47 years, beginning in 1973 as a charter pilot for Reading Aviation Services. (Doc. No. 29-15 at 14:8–9, 29:6–11; *see also* Doc. No. 29-13 at p. 3.) He has almost 14,000 hours of flight time, holds four type ratings (including a type rating for the Cessna Citation CE-500 series), and is a certified flight instructor and FAA pilot proficiency examiner. (*See* Doc. No. 29-15 at 14:9–10, 18:18–21; Doc. No. 29-13 at p. 2; July 14, 2021 Draft Hr’g. Tr. at 11:1.) In 1982, after a decade of flying for other companies, Fruchter founded Marc Fruchter Aviation Inc, which offered aircraft management and pilot services. (Doc. No. 29-13 at p. 3; July 14, 2021 Draft Hr’g. Tr. at 11:14.) Twenty years later, he sold Aviation Inc., and since 2002, he has been providing consulting services to corporate flight departments, commercial aviation operations, and the legal profession through Aviation Consultants, Ltd. (Doc. No. 29-13 at p. 3; *cf.* Doc. No. 26-18 at 18:8–13; 19:11–14 (confirming that Fruchter was last hired as pilot in command for a jet aircraft carrying passengers in 2002).)

Defendants do not appear to take issue with these general qualifications, and instead,

argue that Fruchter is not qualified to opine specifically about the predictability of turbulence because he is not a meteorologist.⁸ (Doc. No. 26-1 at p. 21.) We disagree. Although Fruchter is not a meteorologist (a fact he readily admits), he testified that as part of his education in the aviation industry, he took “weather [and] radar courses,” including a “high altitude weather course.” (Doc. No. 29-15 at 26:20–27:11.) And during this training, he learned “how to properly prepare for a flight from a weather perspective.” (July 14, 2021 Draft Hr’g. Tr. at 13:3–7; *accord* Doc. No. 29-4 at 6:22–7:6, 7:25–18:12 (Lintz testifying that pilots routinely consider weather briefings and the likelihood of severe turbulence when preparing for a flight)). Therefore, Fruchter has “specialized skills” that allow him to opine about a pilot’s ability to predict turbulence using available weather forecasts and tools. *See Pineda*, 520 F.3d at 245 (finding the expert qualified to opine in a products liability case that a warning was a proper solution to an engineering defect because even though the expert admitted he was not a “warnings expert,” his “expertise in the stresses and other forces that might cause a material such as glass to fail was more than sufficient to satisfy Rule 702’s substantive qualification requirement”); *Robertson-Armstrong v. Robinson Helicopter Co.*, CIVIL ACTION NO. 13-2810, 2015 WL 7307235, at *3 (E.D. Pa. Nov. 19, 2015) (finding expert pilot was “qualified to opine not only on piloting and helicopter operation but also on . . . regulatory compliance” because “his piloting background has required him to develop and maintain adequate familiarity with the

⁸ Defendants point to Fruchter’s deposition testimony about the 250 mb wind charts, noting that Fruchter failed to plot the flight path of the Biomet flight or confirm that the flight was affected by the allegedly high winds displayed on the chart, and that he has not explained how the chart gives a “clear indication of probable CAT.” (Doc. No. 26-1 at pp. 20–21.) According to Defendants, these deficiencies are the “result of the fact that he is not qualified to provide these opinions.” (*Id.* at p. 21.) We think these issues go more to the reliability of Fruchter’s opinion about the predictability of turbulence, not to his qualifications to give such an opinion. *Cf. In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 743 & 744 n.11 (finding that although the expert made a “significant” number of mistakes, those mistakes did not “render her unqualified as an expert for purposes of Rule 702”).

applicable federal regulations”).

Defendants also argue that Fruchter is not qualified to offer this opinion because he “is not familiar with the modern aviation weather information available to the pilots on the day of the Incident.” (Doc. No. 26-1 at p. 15.) Although the technology has changed since Fruchter last flew commercially in 2002, we do not believe that this alone renders him unqualified to offer an opinion about predicting turbulence. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 753 (holding that although plaintiff’s proposed medical expert — who stopped practicing internal medicine 18 years earlier when she began consulting for litigation — was “arguably a relatively poor clinician and less than fully credible witness,” she still “qualifies as an expert”). Put simply, although Fruchter received his weather forecasts, briefings, and maps via fax, there is no reason he cannot opine about the usefulness of those same forecasts, briefings, and maps when they are delivered through an online application. (July 14, 2021 Draft Hr’g Tr. at 54:16–24.)

In short, even if Fruchter is not the most qualified to opine about a pilot’s ability to predict turbulence, we cannot find that he is *unqualified* to do so. *See Pineda*, 520 F.3d at 244 (“It is an abuse of discretion to exclude testimony simply because the trial court does not deem the proposed expert to be the best qualified or because the proposed expert does not have the specialization that the court considers most appropriate.” (quoting *Holbrook v. Lykes Bros. S.S. Co.*, 80 F.3d 777, 782 (3d Cir. 1996))); *see also In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 741 (declining to impose “overly rigorous requirements of expertise” and allowing “more generalized qualifications”).

B. Reliability

Next, Defendants argue that Rivlin’s opinions about the predictability of turbulence, pre-flight safety briefings, and turbulence penetration procedures should be stricken because they are

unreliable. Specifically, Defendants assert that Rivlin’s opinions are unsupported, contradict the factual record, and are inconsistent with the opinions of other experts. (*See, e.g.*, Doc. No. 26-1 at p. 5.) Rule 702’s reliability prong looks to whether the proffered testimony is “based on the methods and procedures of science rather than on subjective belief or unsupported speculation.” *Schneider ex rel. Schneider*, 320 F.3d at 404 (cleaned up). District courts in this Circuit consider several factors when evaluating whether this standard is satisfied:

- (1) whether the method consists of a testable hypothesis;
- (2) whether the method has been subject to peer review;
- (3) the known or potential rate of error;
- (4) the existence and maintenance of standards controlling the technique's operation;
- (5) whether the method is generally accepted;
- (6) the relationship of the technique to methods which have been established to be reliable;
- (7) the qualifications of the expert witness testifying based on the methodology;
and
- (8) the non-judicial uses to which the method has been put.

Pineda, 520 F.3d at 247–48. These factors, which were first outlined in the Supreme Court’s *Daubert* decision and the Third Circuit’s decision in *Downing*, are neither exhaustive nor applicable in every case. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 741 (“We now make clear that a district court should take into account all of the factors listed by either *Daubert* or *Downing* as well as any others that are relevant.”); *see also Kumho Tire*, 526 U.S. at 142 (explaining that the “list of factors was meant to be helpful, not definitive”).

Reliability is not intended to be a high standard, “nor is it to be applied in a manner that requires the plaintiffs to prove their case twice — they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only

have to demonstrate by a preponderance of evidence that their opinions are reliable.” *Oddi*, 234 F.3d at 145 (quotation marks omitted). “The test of admissibility is not whether a particular scientific opinion has the best foundation or whether it is demonstrably correct,” but instead, “whether the particular opinion is based on valid reasoning and reliable methodology.” *Id.* at 145–46; *see also In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 744 (“The grounds for the expert’s opinion merely have to be good, they do not have to be perfect.”).

1. The Pilots’ Ability to Predict Turbulence or CAT along the Flight Path

Fruchter opines that given the tools available to them, Lintz and McClintic should have anticipated the likelihood of turbulence along the flight path, warned the passengers about that turbulence, and advised them to remain seated with seat belts buckled for the entire flight, and especially during the descent. Specifically, Fruchter opines that the available AIRMET, PIREPs, and upper wind charts indicated the potential for severe turbulence, and the pilots should have known that CAT is prevalent in the Great Lakes region in the winter. (Doc. No. 26-16 at pp. 3, 6.) Defendants argue that these are not reliable bases for Fruchter’s opinion because:

(1) Fruchter has cited no support for his opinion about the prevalence of CAT in the Great Lakes region; (2) there is no evidence that any PIREPs were available to the pilots before the flight or that the enroute PIREPs were reliable indicators of turbulence for the Biomet flight, and (3) Fruchter fails to explain how the upper air wind charts and AIRMET indicate a likelihood of turbulence. (Doc. No. 26-1 at pp. 19–22.)

a. The Prevalence of CAT in the Great Lakes Region

Beginning with Fruchter’s assertion that CAT is prevalent in the Great Lakes region in winter, we agree with Defendants that Rivlin has not met his burden of showing that this is a reliable basis for Fruchter’s opinion. Notably, Fruchter did not give any support for this

conclusion in his initial report, rebuttal report, deposition testimony, or hearing testimony. He did not, for example, study weather reports from previous years to determine whether there are more reports of severe turbulence in the Great Lakes region as opposed to other regions. Nor did he cite studies by other scientists. In fact, neither Fruchter nor Rivlin have cited *any* studies, articles, or guidance that support Fruchter's assertion that there is a well-known likelihood of CAT in the Great Lakes region in the wintertime. Indeed, during his deposition, Fruchter acknowledged that he is "not aware of anything that says it's dangerous to fly over the Great Lakes." (Doc. No. 29-15 at 143:2–4.)

Although a lack of peer review or general acceptance of an opinion are not dispositive on the issue of reliability, they are two relevant factors in the inquiry. *See Oddi*, 234 F.3d at 145 ("The fact of publication (or lack thereof) in a peer reviewed journal will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology upon which an opinion is premised."); *see also Kumho Tire*, 526 U.S. at 142 (finding it telling that "despite the prevalence of tire testing," the plaintiff did not "refer to any articles or papers that validate Carlson's approach"). This lack of study, peer review, or general acceptance is particularly telling in this case because Fruchter has only limited qualifications in weather forecasting. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 741 ("[T]he level of expertise may affect the reliability of the expert's opinion.").

Last, we note that Defendants have presented two of their own experts, one meteorologist and one commercial pilot, both of whom expressly disagree with this basis of Fruchter's opinion. Pilot Matthew Raver notes in his rebuttal report that there is "no support" in "FAA documentation, National Business Aviation Association materials, training materials from Flight Safety International, the aircraft flight manual, [or] the FAA Aeronautical Information Manual"

for Fruchter’s assertion that “every flight in the vicinity of the great lakes region requires that passengers be seated for the entire flight.” (Doc. No. 26-21 at p. 3.) In addition, Raver notes that it “is unclear why Mr. Fruchter selects the Great Lakes Region for such treatment,” given that “in the winter months, the jet stream routinely dips well below the Great Lakes Region.” (*Id.*)

Similarly, forensic meteorologist Elizabeth J. Austin, Ph.D., C.C.M.,⁹ states in her rebuttal report that she is “not aware of any study that” supports Fruchter’s assertions about the prevalence of CAT in the Great Lakes region. (Doc. No. 26-12 at p. 9.) To the contrary, Dr. Austin identifies a 2008 study, which analyzed 12 years of pilot reports and found that incidents of moderate or greater turbulence were more likely in areas other than the Great Lakes region. (*Id.* at p. 9.) Although Fruchter reviewed the Raver and Austin reports, he has not addressed these counter arguments. (*See* Doc. No. 29-15 at 126:10 (“I looked at Dr. Austin’s report.”); Doc. No. 29-14 (rebuttal report to Raver).) *Cf. In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 762 (explaining that the expert must provide some “explanation if the defendants pointed to some likely cause of the plaintiff’s illness other than the defendants’ actions”); *Sikkelee*, 2021 WL 392101, at *17 (finding expert’s testimony reliable where he “adequately explained why he discounted” one contrary authoritative text “and instead relied on a different authoritative text”).

For those reasons, we conclude that Fruchter’s opinion that the pilots should have predicted a likelihood of turbulence is not reliable to the extent it is based on the alleged prevalence of CAT in the Great Lakes region.

b. PIREPs

Fruchter’s opinion is also based on Lintz’s statement that after the plane landed, the pilots

⁹ “C.C.M.” stands for “Certified Consulting Meteorologist.”

saw that there were “22 reported incidents within a 150-mile radius of our flight at the same time.” (Doc. No. 29-15 at 129:19–130:7.) According to Fruchter, these 22 reports should have alerted Lintz and McClintic to the likelihood that they would encounter turbulence. (Doc. No. 29-15 at 127:19–128:20.) However, in reaching this conclusion, Fruchter did not verify that there were 22 reports, review the substance of those reports, or confirm that all 22 reports suggested a likelihood of CAT along the plane’s flight path. (*Id.* at 130–32.) Instead, he “took Captain Lintz’s word for it.” (*Id.* at 130:13–14; *see also id.* at 132:7–8 (“What I’m basing it on is Captain Lintz’s statement in this email.”).) But Captain Lintz’s “word” does not even state that there were 22 reports *about turbulence*. *Cf. In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 763–64 (“We think that the district court essentially, and properly, read Dr. DiGregorio’s testimony as showing that his opinion that PCBs caused plaintiffs’ illnesses was only a hypothesis which he had yet to attempt to verify or disprove by subjecting it to the rigors of scientific testing.”). “Surely, Rule 702 requires more than this.” *In re Jacoby Airplane Crash Litig.*, Civ. No. 99-6073 (HAA), 2007 WL 5037683, at *31 (D.N.J. Aug. 27, 2007) (“The Court will not allow [the expert pilot] to opine at trial that the turn coordinator is defective in design simply because of one deponent’s testimony and another pilot’s thoughts expressed via email.”).

And because Fruchter did not independently verify the existence or substance of the PIREPs, he could not explain why any given PIREP should have put the pilots on notice of the likelihood of severe turbulence, and could not explain how differences in altitude, distance, and timing would have affected the usefulness of the PIREPs for Lintz and McClintic. *See Gen. Elec. Co. v. Joiner*, 552 U.S. 136, 146 (1997) (“But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an

analytical gap between the data and the opinion proffered.”).

Dr. Austin, however, did review the available PIREPs, pulling every PIREP “for moderate or greater turbulence . . . between 6:45 a.m. and 8:35 a.m. EST on January 21, 2017 (note that the [Biomet flight] turbulence incident occurred at approximately 8:35 a.m. EST) for flight levels both above and below 30,000 feet MSL” (Doc. No. 26-7 at p. 24.) Dr. Austin found that Lintz’s PIREP¹⁰ for “severe turbulence . . . was the first reported severe turbulence along the flight path and is the only one in the region of the flight path.” (*Id.*) And of the moderate turbulence PIREPs, the majority were “to the south or the west of the [Biomet] flight path,” and the “PIREPs for turbulence along the flight path were either not located in time or not located in space with [the Biomet flight].” (*Id.* at p. 25.) Therefore, these PIREPs could not have “provide[d] any forecasting potential or lead time for the severe turbulence encounter that [the Biomet flight] experienced.” (*Id.* (explaining that the three PIREPs closest to the flight path were 15 to 121 miles away from the Biomet flight and reported turbulence between 33,000 and 34,000 feet MSL).)

Fruchter, who reviewed Dr. Austin’s report, has not rebutted the deficiencies that she identified. To the contrary, Fruchter’s deposition testimony seems to confirm Dr. Austin’s assertion that timing, location, and altitude are relevant to whether a particular PIREP would have been useful to Lintz and McClintic. When asked, “So the fact that somebody reports turbulence at 34,000 feet does not mean that you’re going to experience it at 40,000 feet, correct?” Fruchter confirmed Dr. Austin’s interpretation: “That’s very correct[.]” (Doc. No. 29-15 at 133:14–18.) And later when asked, “what would be a sufficiently close pilot report to

¹⁰ In his supplemental report, Fruchter opines that Lintz failed to submit a PIREP after the incident. (Doc. No. 29-14 at p. 4.) However, during his deposition, Fruchter recanted this statement and acknowledged that Lintz submitted the proper report. (Doc. No. 143:21–144:2.)

warrant requiring your passengers being seated and belted the entire flight?” (Doc. No. 29-15 at 138:12–15), Fruchter responded: “Well, off the top of my head, anything within a hundred miles and 5- or 10,000 feet of altitude, but that’s a ballpark” (*id.* at 138:16–19). Fruchter then clarified that even when “a pilot learns of a report of turbulence within a hundred nautical miles and 5- or 10,000 feet within our altitude,” he would not necessarily have turned the seatbelt sign on at cruise. (Doc. No. 29-15 at 138:20–139:6 (stating that he would have turned it on before commencing his descent, but “I don’t necessarily think I would have turned it on at cruise”); *see also* July 14, 2021 Draft Hr’g Tr. at 19:8–15 (“I would have allowed [the passengers] to move about the cabin if it was smooth at flight level 400”).) However, because Fruchter did not review *any* of the available PIREPs, he could not determine which, if any, of the reports met his own qualifications and therefore would have caused a reasonable pilot in Lintz’s situation to expect turbulence along the flight path. *See Daubert*, 509 U.S. at 590 (“[T]o qualify as ‘scientific knowledge,’ an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation — i.e., ‘good grounds,’ based on what is known.”).

Because Fruchter merely relies on Lintz’s vague reference to 22 reports, he has not demonstrated “good grounds” for concluding that these reports show a likelihood of CAT. *See In re Jacoby Airplane Crash Litig.*, 2007 WL 5037683, at *31 (finding that the expert was not allowed to “simply tell the jury, as an expert, that some ambiguous ‘tests’ have been performed that corroborate Plaintiffs’ theory of the case” because although “Rule 702 might not require perfect grounds . . . it does require good grounds, which is still above what [the expert] advances for this opinion”); *cf. Ellison*, 753 F. Supp. 2d at 482 & 485 (finding expert’s testimony reliable where he explained why his experience in the field led to the conclusion reached).

c. The Upper Wind Charts and AIRMET Tango

That leaves the upper level wind charts and the AIRMET Tango as the remaining bases for Fruchter’s opinion that the pilots should have anticipated a “significant probability of turbulence over the route of flight.” (July 14, 2021 Draft Hr’g Tr. at 79:17–23.) During the Daubert hearing, Fruchter opined that these two bases, on their own, should have alerted the pilots to the probability that they would experience turbulence. (*Id.*) For the reasons discussed below, we find that both are “good grounds” for Fruchter’s conclusion.

First, we find that pilots routinely consider upper wind charts and AIRMETs as part of their pre-flight weather briefing. In addition to Fruchter’s own testimony, Lintz testified that he always considers any available AIRMETs before a flight (Doc. No. 26-4 at 8:6–10), and after the Biomet flight, Lintz stated that he would pay more attention to “wind tracks” and charts depicting areas of wind intensity (Doc. No. 26-13 at p. 4). In addition, a recent FAA circular confirms that pilots consider wind forecasts, including large shifts in wind speed or direction, during their pre-flight briefing. *See* FAA Advisory Circular, Pilot’s Guide to a Preflight Briefing, at 7.4.1.7 (Mar. 15, 2021).¹¹

Therefore, although Fruchter does not have a meteorologist’s understanding of the upper air charts (a fact he readily concedes), we find that his nearly 50 years of experience in the airline industry, as a pilot and an instructor, provide a reliable basis for his opinion about the types of information considered by pilots and how that information would assist a pilot in pre-flight planning. *See* Fed. R. Evid. 702 cmt. to 2000 Am. (acknowledging that the expert witness may rely “solely or primarily on experience,” so long as he or she explains “how that experience leads

¹¹ We reference the 2021 FAA Circular, which was published after the date of the Biomet flight, only as evidence that pilots not only may, but also are now encouraged, to “review forecast wind aloft for the flight” and to “interpolate wind directions and speeds between levels and stations, noting any large shifts in speeds or direction as a means to identify wind shifts.” *Id.*

to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts”).

In addition, we find that Fruchter explained how the wind charts and AIRMET give rise to his ultimate conclusion that the pilots should have anticipated a likelihood of turbulence along the flight path. Beginning with the wind charts, Fruchter relied on the 250 mb and 300 mb NOAA charts issued on the day of the flight. (*See* July 14 Draft Hr’g Tr. at 31:19–36:1 (explaining that for his report, Fruchter relied on Lintz’s deposition transcript, which included the NOAA charts as exhibits).) During the hearing, Fruchter explained that the charts depict wind velocity and direction, and “[i]f either of those things changes to a significant degree over a relatively short space geographically, that’s a pretty good indication you’re going to have a level of turbulence.” (July 14, 2021 Draft Hr’g Tr. at 30:25–31:8; *see also id.* at 67:10–14 (“[T]he difference in the velocity and the direction of the winds over a small — a relatively small geographic area or a relatively short altitude distance gives you an indication of the probability of turbulence.”).) For example, the 250 mb chart for the day of the incident shows a drastic difference across a short geographic area near the flight path, going from 50 knots to 115 knots, with the plane “between the 115 and 50.”¹² (Doc. No. 29-15 at 98:22–99:18.) Because the flight path went between the two zones, Fruchter concludes that the pilots should have anticipated turbulence in that area, warned the passengers, and advised them to stay seated throughout the flight and especially during the plane’s descent.

¹² Although Fruchter’s report and deposition testimony only discuss the 250 mb wind chart, and the change in wind speed across a horizontal plane, when viewed in tandem, the two NOAA wind charts also show a vertical change in wind speed. The 250 mb chart depicts the incident location in dark blue (reflecting 75 to 100 knots) and the 300 mb chart depicts the incident location in teal (reflecting 100 to 125 knots). (*Compare* Doc. No. 26-12 at p. 6 *with id.* at p. 7.) Although Dr. Austin concluded that this difference suggests only a minimal change in wind speeds between the two heights, it will be for the jury to decide whose expert opinion is more credible on the issue.

In addition, the AIRMET Tango warned about the potential for CAT along the entire flight path. (Doc. No. 29-15 at 147:16–148:5; *see also* July 14, 2021 Draft Hr’g Tr. at 48:18–22 (confirming that a “prediction in an AIRMET for moderate turbulence between 24,000 and 40,000 feet is by definition clear air turbulence”).) Defendants argue that this opinion is at odds with the FAA’s Aeronautical Information Manual, which states that an AIRMET Tango forecasts *moderate* turbulence, while SIGMETs forecast *severe* turbulence and CAT. (*See* Doc. No. 26-14 at § 7–1–5c. (“SIGMETs are issued when . . . [s]evere or extreme turbulence or clear air turbulence (CAT) . . .”). But this argument misconstrues the description of CAT included in the manual.

The manual explains that “CAT” refers to “[h]igh level turbulence (normally above 15,000 feet ASL)” and is “not associated with cumuliform cloudiness, including thunderstorms.” (Doc. No. 26-14 at Tbl. 7–1–10 n.1; *see also* July 14, 2021 Draft Hr’g Tr. at 67:22–68:2 (Fruchter confirming that “if you’re above at [sic] 15,000 feet above sea level and you don’t have any of the cloudiness or thunderstorms, then if you encounter high turbulence, it’s going to be a CAT”).) And CAT conditions can be of varying intensities —“light, moderate, severe, or extreme,” which seems to confirm Fruchter’s conclusion that an AIRMET for moderate turbulence above 15,000 feet would necessarily suggest a likelihood of moderate CAT. (Doc. No. 26-14 at § 7–1–24; *see also* Doc. No. 26-15, Advisory Circular re Clear Air Turbulence Avoidance, at § 8.1 (“In-flight weather advisories (e.g., significant meteorological information (SIGMET) and Airmen’s Meteorological Information (AIRMET)) are used to disseminate important information on atmospheric turbulence, both convective and CAT.” (emphasis added)).)

Given this evidence, we find that Fruchter’s conclusion that the pilots should have

anticipated the likelihood of turbulence along the flight path given the available upper wind charts and the AIRMET Tango is reliable.¹³ However, as discussed above, we preclude as unreliable Fruchter’s assertion that there is a higher likelihood of CAT in the Great Lakes region in the winter and that the pilots should have analyzed available PIREPs.

B. The Pre-Flight Safety Briefing

Fruchter’s second opinion is that the pilots failed to provide an appropriate pre-flight passenger safety briefing as required by 14 C.F.R. § 91.519(a)(2). (Doc. No. 29-12 at p. 6 (“FAR 91.519 details the passenger briefing required before each takeoff. From first officer Josh McClintic’s deposition testimony, his briefing did not satisfy this requirement.”).) Section 91.519(a)(2) requires that the pilot in command “ensure that all passengers have been orally briefed on” multiple safety regulations, including the “[u]se of safety belts and shoulder harnesses”:

Each passenger shall be briefed on when, where, and under what conditions it is necessary to have his or her safety belt and, if installed, his or her shoulder harness fastened about him or her. This briefing shall include a statement, as appropriate, that Federal Aviation Regulations require passenger compliance with the lighted passenger sign and/or crewmember instructions with regard to these items[.]

14 C.F.R. § 91.519(a)(2).

In his initial report, Fruchter notes that McClintic provided the passengers with a “general introduction to the aircraft, where food and beverages were located, anticipated flight time, and

¹³ We stress the *limited* nature for which we are allowing Fruchter to testify in this regard. Fruchter may testify that pilots typically consider the wind charts in pre-flight briefings, that the charts for the day of the flight depict a rapid change over a short geographic area, and that given this change and the AIRMET Tango, the pilots should have warned the passengers that there was a significant probability of turbulence during the flight. We find this narrow conclusion rests on good, if not perfect, grounds. *See In re Paoli R.R. Yard PCB Litig.*, 35 F.3d at 744 (“The grounds for the expert’s opinion merely have to be good, they do not have to be perfect.”). Although we find the opinion admissible, we remind the parties that the jury will be the ultimate judge of the weight to be afforded Fruchter’s opinion in light of any contradictory evidence or expert testimony submitted by Defendants.

the location of the aircraft's emergency exits. He also instructed the passengers to listen to the recorded messages that were played during taxi out for takeoff and to review the passenger briefing cards located by their seats." (Doc. No. 29-12 at p. 3.) However, McClintic did not mention "seatbelt use or the risk of turbulence during the flight." (*Id.*)

In his rebuttal report, Fruchter clarified that he was taking issue with *both* McClintic's initial statements and the recorded briefing. (Doc. No. 29-14 at p. 3.) He explained that although the recorded announcement told the passengers, "For your added comfort and safety, always observe the seat belt, no-smoking signs," this statement alone was insufficient to satisfy the requirements of § 91.519. (*Id.*) Specifically, "[t]he instruction on the recorded announcement to observe the seat belt sign would lead a passenger to believe that when the sign is off, it is ok to move about the aircraft cabin and that there was no risk to their safety while doing so." (*Id.*) Fruchter opines that "[h]ad the passengers been properly briefed, there is every reason to believe they would have heeded the warnings [and] been seated and belted" when the plane encountered turbulence. (*Id.*)

Defendants assert that this opinion is unreliable because Fruchter "ignores the factual record and concludes that the pilots did not play a recorded pre-flight briefing addressing the use of seatbelts." (Doc. No. 26-1 at p. 24.) This mischaracterizes Fruchter's conclusion, which is that although the pilots played a recorded pre-flight briefing, there "was another audio recording regarding sea[t] belt use [that] was not broadcast to the passengers during this flight." (Doc. No. 29-14 at p. 3.)

Defendants also take issue with Fruchter's opinion because § 91.519(a)(2) does not explicitly require pilots to warn passengers that they may experience turbulence at any point

during the flight.¹⁴ (*Id.* at pp. 25–26; Doc. No. 26-1 at pp. 24–26.) They highlight Fruchter’s deposition testimony, during which he admits that § 91.519(b) allows a pilot to forgo the oral briefing when he “determines that the passengers are familiar with the contents of the briefing.” (Doc. No. 26-1 at p. 25.) However, this fact on its own does not render Fruchter’s opinion unreliable because there is no evidence that Lintz, as the pilot-in-command, made that determination.

In addition, Defendants make much of Section 91.519(b)’s statement that the oral briefing “may be supplemented by printed cards.” (Doc. No. 26-1 at p. 25.) However, the “supplement” to which this section refers is “[a] diagram of, and methods of operating, the emergency exits; and [o]ther instructions necessary for use of emergency equipment.” 14 C.F.R. § 91.519(b). Contrary to Defendants’ suggestions, the rule does not appear to allow a pilot-in-command to use a printed card in lieu of a formal briefing in all circumstances. Therefore, we do not view this as a compelling reason to find Fruchter’s opinion about the contents of the pre-flight safety briefing unreliable.

Last, Defendants argue that Fruchter’s opinion is unreliable because he “could not point to any industry guidance, rule, regulation, or other reliable authority supporting his opinion” that passengers be told to remain seated any time turbulence is predicted. (Doc. No. 26-1 at pp. 25–26.) However, Fruchter testified that it is “a well-known fact within the industry and within the community,” suggesting that his view is generally accepted in the field. (Doc. No. 29-15 at

¹⁴ Defendants also argue that Fruchter’s opinion regarding whether the pilots provided an oral pre-flight briefing as to seatbelt use should be stricken because “it is based solely on Plaintiff’s counsel’s willful sharing of [Defendant’s] confidential mediation statement.” (Doc. No. 26-1 p. 25 n.2.) During the Daubert hearing, defense counsel explained that he shared the mediation statement with Fruchter because he did not yet have a defense expert report and needed Fruchter to understand Defendants’ position. (July 14, 2021 Draft Hr’g Tr. 91:18–23.) The Court declines to strike Fruchter’s opinion merely because he reviewed the mediation statement.

52:9–11.)

In addition, during the Daubert hearing, Fruchter explained that his opinion was based not only on his own extensive experience, but also a 2006 FAA Advisory Circular on Preventing Injuries Caused by Turbulence. (*See* Doc. No. 29-7; *see* July 14, 2021 Draft Hr’g Tr. at 84:15–22.) The circular outlines “operating procedures to prevent injuries caused by turbulence,” including procedures “promoting voluntary seatbelt use and compliance with the seatbelt sign,” stating that the flight crew should “promptly and clearly communicate turbulence advisories including specific directions to [flight attendants] and to passengers.” (Doc. No. 29-7 at ¶ 9b.) Defendants argue that the circular is not a reliable basis for Fruchter’s opinion because it is directed to “crewmembers, aircraft dispatchers, managers, trainers, and others associated with flight operations under Title 14 of the Code of Federal Regulations (14 CFR) part 121.” (*Id.* at ¶ 1.) The Biomet flight was a part 91 flight, not a part 121 operation. However, the circular later notes that it “may also be valuable to persons associated with operations under . . . part 91.” (*Id.* at ¶ 4.) Although the circular may not be the most applicable, we cannot find that it is an unreliable basis for Fruchter’s opinion given this language.

Last, we note that § 91.519(a)(2) is vague on exactly what the pre-flight briefing should say about seat belt use, requiring that each passenger be briefed “on when, where, and under what conditions it is necessary to have his or her safety belt . . . about him or her.” 14 C.F.R. § 91.519(a). The regulation does not, therefore, contradict Fruchter’s opinion.

Given this evidence, we find that Fruchter’s opinion about the pilot’s pre-flight safety briefings is reliable and based on “good grounds.”

C. Airplane Flight Manual Turbulence Procedures

Defendants also move to strike Fruchter’s opinion that Lintz failed to “follow the

directions in the Aircraft Flight Manual” when he “did not immediately use the speed brakes to get the aircraft to the recommended turbulence penetration speed as quickly as possible thereby lessening the effect of the turbulence on the passengers and the aircraft.” (Doc. No. 29-12 at p. 6; *see also* Doc. No. 29-15 at 151:10–13 (“I think [Lintz’s] reaction to [the CAT] exacerbated the strength of the event and may have caused an additional injury to the passenger.”).) Defendants argue that Fruchter is not qualified to opine about the cause of the passengers’ injuries. *See Sikkelee*, 2021 WL 392101, at *21 (“[T]o the extent that [the expert] opines that ‘the facial/head injuries to [the plaintiff’s passenger] are consistent with the passenger impacting the interior of the aircraft as a result of not wearing a shoulder harness,’ there is absolutely no indication in the record that [the expert] has any reasonable basis to reach such a conclusion, or that he is qualified to offer such an opinion.” (cleaned up)). They also argue that Fruchter’s opinion is not reliable because he did not conduct any studies which show a correlation between the reduction in airspeed and the impact of turbulence on passengers, nor did he cite treatises or other materials in support of his opinion. (Doc. No. 26-1 at p. 28.)

Defendants note that during his deposition, Fruchter conceded that although “[t]he impact on the aircraft and the passengers [would have] lessened if you are at or close to turbulence penetration speed,” he could not speak to whether it “would have lessened the injuries” that the passengers sustained. (Doc. No. 29-15 at 157:12–158:22.) They also point to Fruchter’s admission that he did not perform any studies to support his opinion, and instead, based his opinion on “logic[]” and his “experience that . . . the effect on the airplane and the passengers of turbulence when you’re at turbulence penetration speed is considerably less than when you’re approaching the red line.” (*Id.* at 154:23–155:5.)

Rivlin does not respond to Defendants’ arguments in his briefing on the motion to strike,

nor did he provide support for this opinion at the Daubert hearing. Therefore, Defendants' motion as to this opinion is granted as uncontested. *See Ghoubrial v. Johanns*, Civil Action No. 05-CV-04256, 2006 WL 8459472, at *2 n.6 (E.D. Pa. Sept. 29, 2006) (“[P]laintiff filed a response but did not address the sovereign immunity argument made by the United States. The motion to dismiss by the United States could, therefore, be granted as uncontested.”); *Moore v. Vangelo*, No. Civ.A. 03-4718, 2005 WL 2178918, at *1 (E.D. Pa. Sept. 6, 2005) (granting motion to strike as uncontested because the plaintiff failed to respond). In the alternative, we find that the lack of any response means Rivlin has not explained why Fruchter's opinion is reliable despite his limited qualifications to opine about the cause of Rivlin's injuries, his admission that he performed no studies, and his failure to cite treatises or other materials in support of his conclusion.¹⁵ *See Sikkelee*, 2021 WL 392101, at *21 n.192 (“The Court notes that Lycoming has not defended this portion of [the expert's] opinion in its response brief and, thus, provides no explanation for the potential relevance of this opinion.”).

V. Conclusion

For the reasons discussed above, Defendants motion to strike is granted in part and denied in part. We strike Fruchter's assertions that there is a likelihood of CAT in the Great Lakes region in the winter and that the pilots failed to properly consider PIREPs. We also strike Fruchter's opinion that Lintz failed to follow the procedures outlined in the Airplane Flight Manual. Fruchter may, however, testify about the remainder of his opinions regarding the likelihood of CAT along the flight path and the appropriateness of the pilot's safety briefing.

An appropriate Order follows.

¹⁵ In addition, Raver asserts that Fruchter “cited the wrong procedure” in the manual “for a loss of control and sudden impact from severe CAT,” by referencing the procedure for turbulent air penetration instead of unusual altitude recovery. (*See* Doc. No. 26-21 at pp. 8–9.) Fruchter does not respond to Raver's assertion, and Rivlin fails to address it in his briefing on the motion to strike.